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Archaeology Southwest
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Education

2000 University of Arizona, B.A. Anthropology and Creative Writing
2005 Arizona State University, M.A. Anthropology (Archaeology)
2013 Arizona State University, Ph.D. Anthropology (Archaeology)

Professional Employment and Appointments

2019-Present. cyberSW Manager, Archaeology Southwest.
2017-2019. Assistant Research Professor, Arizona State University, Research Computing.
2013-2017. Postdoctoral Researcher, Arizona State University, Center for Social Dynamics and Complexity.

Most Relevant Publications/Products

Coccia, Mario and **Joshua Watts** (2020) A Theory of the Evolution of Technology: *Technological Parasitism* and the Implications for Innovation Management. *Journal of Engineering and Technology Management*. 55 [101552].

Watts, Joshua, Rebecca E. Morss, C. Michael Barton, and Julie L. Demuth (2019) Conceptualizing and implementing an agent-based model of information flow and decision making during hurricane threats. *Environmental Modelling and Software*. 122 [104524].

Watts, Joshua, and A. Ossa (2016) Network Topologies and ABM Simulations: Modeling Economies of the Sedentary Period Hohokam. *American Antiquity* 81(4):623-44.

Watts, Joshua (2016) Scale Dependency in Agent-based Modeling: How Many Time Steps? How Many Simulations? How many Agents? *Uncertainty and Sensitivity Analysis in Archaeological Computational Modeling*. Edited by Marieka Brower-Burg. Interdisciplinary Contributions to Archaeology. Pp. 91-112. (Springer).

Watts, Joshua (2014) Hohokam Trade Networks Model. *CoMSES Computational Model Library*. Retrieved from: <https://www.openabm.org/model/4385/version/1>

Watts, Joshua (2013) Traces of the Individual in Prehistory: Flintknappers and the Distribution of Projectile Points in the Eastern Tonto Basin, Arizona. *Advances in Archaeological Practice: A Journal of the Society for American Archaeology* 1(1):25-36.

Additional Publications/Products

J. Watts (2019) CHIME ABM Hurricane Evacuation Model. *CoMSES Computational Model Library*. Retrieved from: <https://www.comses.net/codebases/5504/releases/1.4.0/>

R. Morss, J. Demuth, H. Lazrus, L. Palen, C.M. Barton, C. Davis, C. Snyder, O. Wilhelmi, K. Anderson, D. Ahijevych, J. Anderson, M. Bica, K. Fossel, J. Henderson, M. Kogan, K. Stowe, and **J. Watts** (2018) Hazardous Weather Prediction and Communication in the Modern Information Environment. *Bulletin of the American Meteorological Society*.

A. D. Lack, S. E. Kelly, D. R. Abbott, **J. Watts**, and P. Cox (2011) Identifying and Charting the Rise of Specialized Red-on-Buff Production along Queen Creek, Phoenix Basin. *Journal of Arizona Archaeology*. 2(1): 37-50.

D. R. Abbott and J. Watts. (2010) Identical Rock Types with Different Chemistry: Sourcing Phyllite-Tempered Hohokam Pottery from the Phoenix Basin, Arizona. *Journal of Archaeological Science* 37(7): 1612-1622.

Synergistic Activities

- 1) 2010-present. Various roles on the Arizona Governor's Archaeological Advisory Commission, Arizona Archaeological Council.
- 2) 2017-present. Development of methods and tools for using agent-based models in high-performance computing contexts.

Current/Pending NSF or NEH support:

Transforming cyberSW: A Digital Indigenous Field Guide of Plants and Animals in the U.S. Southwest (in prep to submit January 2024 to NEH DHAG).

HNDS-R: Human Networks, Sustainable Development, and Lived Experience in a Nonindustrial Society (NSF awarded 2022 w/ Scott Ortman CU Boulder as lead).

HNDS-I: From Households to Landscapes: Cyberinfrastructure for Deep Time Network Analyses in the Pre-Hispanic Southwest (NSF awarded 2021 w/ Jeff Clark Archaeology Southwest as lead).

Collaborators

Ph.D. Advisors: David Abbott, C. Michael Barton, Marco Janssen, Sander van der Leeuw (all from Arizona State University).

Co-Authors: Rebecca E. Morss (National Center for Atmospheric Research [NCAR/UCAR]), C. Michael Barton (Arizona State University), Julie L. Demuth (NCAR/UCAR), Alanna Ossa (SUNY Oswego), Heather Lazrus (NCAR/UCAR), Leysia Palen (CU Boulder), Christopher Davis (UCAR/NCAR), Christopher Snyder (NCAR/UCAR), Olga Wilhelmi (NCAR/UCAR), Kenneth Anderson (CU Boulder), David Ahijevych (NCAR/UCAR), Jennings Anderson (CU Boulder), Melissa Bica (CU Boulder), Katherine Fossil (NCAR/UCAR), Jennifer Henderson (CU Boulder), Marina Kogan (CU Boulder), Kevin Stowe (CU Boulder), Mario Coccia (Yale University).